

WORKING PAPER

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METHODOLOGY

Explanation of the methodology used in determining the supply requirements of the VC/NVA follows:

1. Strength of Forces

The current VC strength of 77,110 men includes 10,000 combat support types. The current strength of the NVA in South Vietnam is 15,800. The current actual number of NVA regular combat battalion is:

VC	87
NVA	30
Total	117

However, for purposes of determining logistical requirements, we have converted the total VC manpower of 77,110 men into 145 battalion equivalents of 530 men each; this battalion strength corresponds with the estimated NVA battalion strength used in this study.

The projected strength of the Communist force was calculated by using the MACV estimate that the Communists could expand to a maximum of 155 VC/NVA battalions by the last quarter of 1966. Of the 155 battalion force, we estimate that the VC will number 106 battalions and the NVA will number 49 battalions. The current 87 VC and 30 NVA battalions totaling 77,110 men and 15,800 men respectively, when projected to 106 VC and 49 NVA battalions results in a projected total strength of 93,810 VC and 25,970 NVA.

2. Levels of Combat

To determine the current level of combat, we researched ANNEX E (Significant Victories and Defeats) of all available USMACV Monthly Evaluation reports from 7 January 1965 to 7 January 1966 (the Monthly Evaluation for August 1965 is

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not available in Washington) and SITREPS from 7 January 1966 to February 1966. According to the information in the MACV Monthly Evaluations and the SITREPS, there were an estimated 600 VC/NVA battalion size actions during the last 6 months (approximately double the number of battalion size actions during the first 6 months of 1965). During the same period, the number of VC/NVA battalions averaged 97 per month (82 in September 1965 to 111 in February 1966).

3. Basic Unit Weapons

Table I gives the estimated breakout of weapons used in the VC battalion and their weights. (also used in the DIA logistical study dated May 1965.)

4. Basic Ammunition Load of the Unit

Table II gives the estimated basic load of ammunition for a VC battalion. (Also used in the DIA logistical study dated May 1965.)

5. Estimated Expenditure of Supplies

Table III gives the estimated expenditure of ammunition by a Communist force in combat. Using 7.9 tons as a standard measure for ammunition basic loads for VC/NVA units, it has been estimated that each day a unit is in action it expends about 1/3 of its basic load of ammunition; the combat factor used is that of an attack of a fortified position.

In Table IV we have presented the current logistical resupply requirements from abroad under 3 levels of combat. The current level of combat (the entire force engaged in combat 1 day out of every 30 days.):

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Class II (Including 5% weapons replacement) & IV for the VC

.0119 pounds per man per day includes the following:

- .01 pounds per man per day are the medical and signal requirements as determined in the DIA logistical of May 1965.
- .0019 pounds per man per day are the weapons replacement requirement (due to fair wear & tear, loss, etc.) based on 5% of the total estimated weapons (145 VC battalion equivalents X 7266.22 lbs of units weapons X 5% = 144.33 lbs. $144.33 \text{ lbs} \div 77,110 \text{ VC} = 0.0019 \text{ pounds per man per day}$).

Class II (Incl 5% weapons replacement) & IV for the NVA

.5019 pounds per man per day includes the following:

- .5 pounds per man per day for all Class IV requirements for NVA
- .0019 pounds per man per day (same as for VC above)

Class V for VC

The 145 VC battalion equivalents X 7.9 tons of ammunition per battalion = 1145.5 tons. $1145.5 \text{ tons} \div 381.8 \text{ tons ammunition (1/3 of basic load) expended each day that the entire force is engaged in combat. } 381.8 \text{ tons} \div 30 \text{ days} = 12.73 \text{ tons expended each day for 30 days to maintain a combat level in which the entire force is engaged in action 1 day out of every 30 days. } 12.73 \text{ tons} \div 77,110 = .33 \text{ pounds per man per day. In the DIA logistical study dated May 1965, the pounds per man per day requirement for ammunition was .06 pounds per man per day. The figure of .33 pounds per man per day used in our current computations is considered more realistic and is based on more complete reporting of information on the current level of combat.}$

Class V for NVA

NVA Class V requirements of .5 pounds per man per day were computed in the DIA logistical study prepared in May 1965. See Table V.

The pounds per man per day requirements when the level of combat is 1 day out of every 7 days are the figures resulting from an exchange of cables between DIA and J2-MACV on 14 December 1965 subsequent to the J2-MACV, Sec Def Briefing, dated 28 November 1965.

The pounds per man per day requirements when the level of combat is 1 day out of every 15 days is an interpolation of the requirements for 1 day out of every 7 days and 1 day out of every 30 days.

In Table VI we have presented the resupply requirements when the Communist force reaches a level of 155 VC/NVA battalions for 3 levels of combat.

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TABLE I
VIET CONG INFANTRY BATTALION WEAPONS (CHICOM WEAPONS)

	<u>Number of Weapons</u>	<u>Weight per Weapons</u>	<u>Total Weight per Battalion</u>
RIFLE	102	8.8 lbs	897.6 lbs
CARBINE	313	8.6 lbs	2,691.8 lbs
MIG/ASSAULT GUN	34	9.48 lbs	322.32 lbs
MG-12.7mm	20	83.5 lbs	1,670.0 lbs
RR-57mm	10	55.0 lbs	550.0 lbs
RL-40mm	5	6.0 lbs	30.0 lbs
MORTAR - 60/61mm	11	44.5 lbs	489.5 lbs
MORTAR - 81/82mm	5	123.0 lbs	615.0 lbs
TOTAL	500		7,266.22 lbs = 3.6 (ST)

NOTE: Personnel Strength 530

TABLE II
VIET CONG INFANTRY BATTALION BASIC LOAD (AMMUNITION)

	No of wpns	No of rds per wpn	Weight per round	Total ammo weight per wpn	Total ammo weight per battalion
RIFLE	102	40	.6 oz	1.5 lbs	153.0 lbs
CARBINE	313	40	.6 oz	1.5 lbs	469.5 lbs
MC/ASSAULT GUN	34	2,160	.6 oz	81.0 lbs	2,754.0 lbs
MG - 12.7mm	20	1,760	4.5 oz	495.0 lbs	9,900.0 lbs
RR - 57mm	10	10	12 lbs	120.0 lbs	1,200.0 lbs
RL - 40mm	5	5	4 lbs	20.0 lbs	100.0 lbs
MORTAR - 60/61mm	11	20	3 lbs	60.0 lbs	660.0 lbs
MORTAR - 81/82mm	5	20	7.3 lbs	146.0 lbs	730.0 lbs
TOTAL	500				15,966.5 lbs 7.9+ (ST)

NOTE: Personnel Strength 530

TABLE III
Attack Expenditures - 2d Day

Type Wpn	No Wpns	Wt/Rd	Rds/Wpn	Lbs/Day/Wpn	Lbs/Day/All Wpn
RIFLE	102	.6 oz	20	.75	76.5
CARBINE	313	.6 oz	6	.22	63.9
LMG	34	.6 oz	170	6.3	214.2
MG 12.7	20	4,502 oz	50	14.0	280.0
RR 57	10	12 lbs	10	120.0	1200.0
RL 40mm	5	4 lbs	5	20.0	100.0
60 MORTAR	11	3 lbs	70	210.0	2310.0
81 MORTAR	5	7.3 lbs	70	511.0	2555.0
TOTAL					6804.6

Type Wpn	No Wpns	Wt/Rd	Rds/Wpn	Lbs/Day/Wpn	Lbs/Day/All Wpn
RIFLE	102	.6 oz	15	.56	57.0
CARBINE	313	.6 oz	3	.11	33.0
LMG	34	.6 oz	100	3.65	124.0
MG 12.7	20	4.5 oz	30	8.5	170.0
RR 57	10	12 lbs	6	72.0	720.0
RL 40mm	5	4 lbs	3	12.0	60
60 MORTAR	11	3 lbs	40	120.0	1320.0
81 MORTAR	5	7.3 lbs	40	292.0	1460.0
TOTAL					5044.0

Average expenditure per Wpn on 1st & 2d expenditures
 $500.5 \times 2 = 1001$
 $5.374 \text{ tons} \div 2 = 2.687 \text{ tons/day}$

TABLE IV

CURRENT LOGISTICAL REQUIREMENTS FOR THE 1ST BATTALION (SUPPORT COMPANY)

STRENGTH	VC	Lbs/Man/Day	MVA	Lbs/Man/Day	Total
1. Each battalion engaged in combat 1 day in 30	77,110*		15,880		
Class of Supply					
Class I & III	negligible		negligible		4,4438
Class II & IV**	.4588	.0119	3,9850	.5019	16,7090
Class V (ammo)	12,7300	.33	3,9700	.5	21,1438 ***
Total	13,1888		7,9550		8.
2. Each battalion engaged in combat 1 day in 15					
Class of Supply					
Class I & III	negligible		negligible		25,5275
Class II & IV**	1,6925	.0439	23,8350	3,0019	20,9600
Class V (ammo)	15,4220	.4	5,5580	.7	48,5775 ***
Total	17,1145		29,3930		8.
3. Each battalion engaged in combat 1 day in 7					
Class of Supply					
Class I & III	negligible		negligible		30,6553
Class II & IV**	6,8203	.1769	23,8350	3,0019	62,5315
Class V (ammo)	46,6515	1,2100	15,8600	2.	93,1633 ***
Total	53,4718		39,7150		8.

* Includes 18,000 combat support troops.
 ** Includes 5% of unit load of weapons for replacements.
 *** Class I supplies for porters and infiltrators (6,000 and 4,500 respectively).

TABLE V
 PROJECTED LOGISTICAL RESUPPLY REQUIREMENTS FROM ABROAD
 (Short Tons Per Day)

STRENGTH	VC	Lbs/Man/Day	MVA	Lbs/Man/Day	Total
1. Each battalion engaged in combat 1 day in 30	93,810*		25,970		
<u>Class of Supply</u>					
Class I & III	negligible		negligible		7.0752
Class II & IV**	.5581	.0119	6.5171	.5019	21.9711
Class V (ammo)	15.4786	.33	6.4925	.5	29.0463 ***
Total	16.0367		13.0096		8.
2. Each battalion engaged in combat 1 day in 15					
<u>Class of Supply</u>					
Class I & III	negligible		negligible		41.0388
Class II & IV**	2.0591	.0439	38.9797	3.0019	27.8515
Class V (ammo)	18.7620	.4	9.0895	.7	68.8903 ***
Total	20.8211		48.0692		8.
3. Each battalion engaged in combat 1 day in 7					
<u>Class of Supply</u>					
Class I & III	negligible		negligible		47.2771
Class II & IV**	8.2974	.1769	38.9797	3.0019	82.7250
Class V (ammo)	56.7550	1.2100	25.9700	2.	150.0021 ***
Total	65.0524		64.9497		8.

* Includes 21,240 combat support troops.
 ** Includes 5% of unit load of weapons for replacement.
 *** Class I supplies for 6,000 porters and 4,500 infantry carriers.

TABLE VI
REQUIREMENTS FOR A NVA DIVISION* OPERATING IN SOUTH VIETNAM UNDER VARYING COMBAT CONDITIONS

	Light Combat**	Conditions as of May 1965
Class I	15.9 (2) ***	5.31 (1) ***
Class II & IV	15.9 (3) ***	2.7 (.5) ***
Class III ****	5.9 (1.7) ***	1.25 (.23) ***
Class V	29.3 (5.5) ***	2.7 (.5) ***
	67.0 (13.2) *** 2	11.96 (2.23) *** of approx 12

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* NVA Division strength 10,632 men.
 ** 1 day of combat out of every 3 days.
 *** pounds per man per day
 **** Includes POL required to move supplies from North Vietnam through Laos to the South Vietnamese Border.